

Mechanics of Options Markets

Chapter 8

Review of Option Types

- A call is an option to buy
- A put is an option to sell
- A European option can be exercised only at the end of its life
- An American option can be exercised at any time

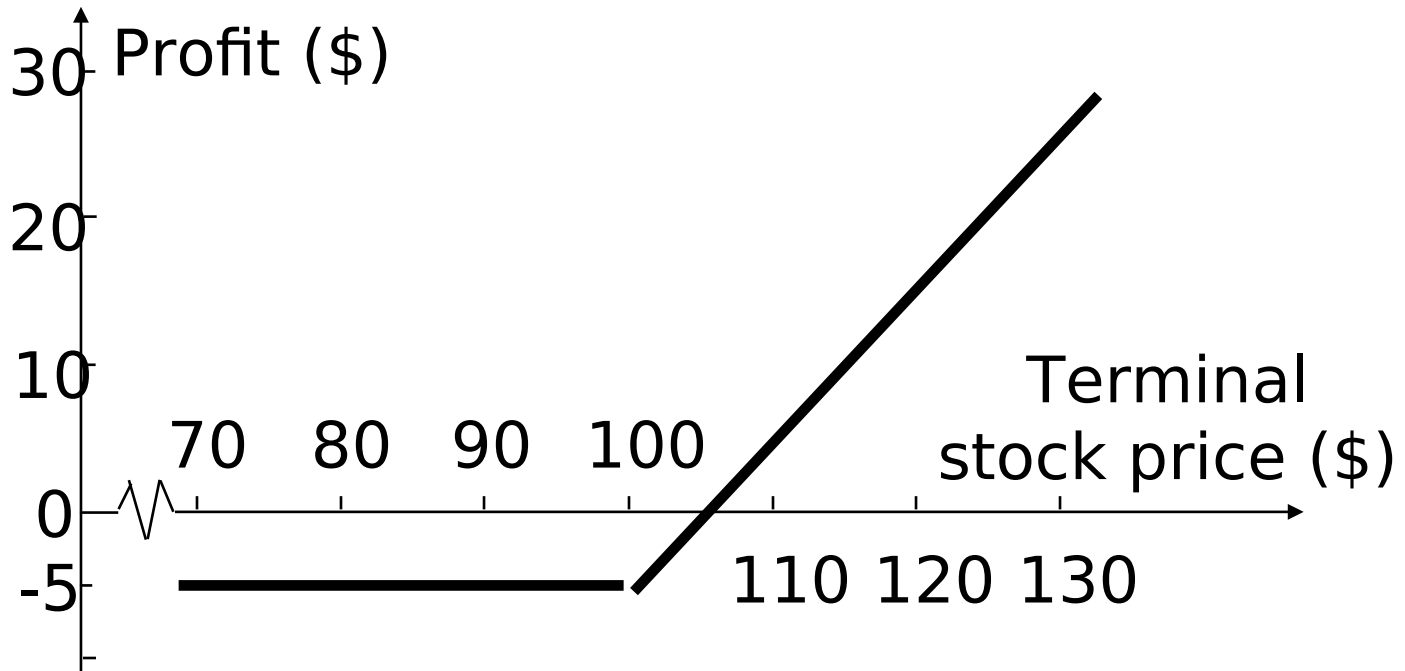
Option Positions

- Long call
- Long put
- Short call
- Short put

Long Call

(Figure 8.1, Page 180)

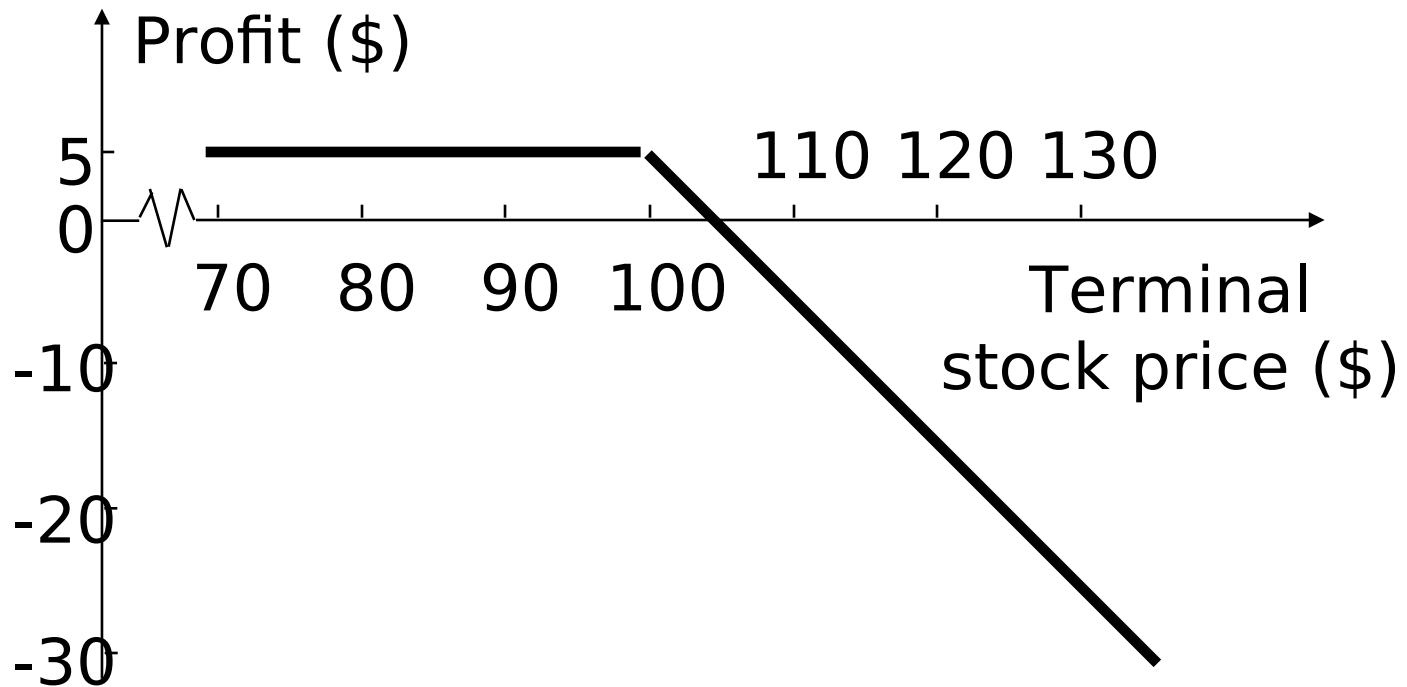
Profit from buying one European call option:
option price = \$5, strike price = \$100, option
life = 2 months



Short Call

(Figure 8.3, page 182)

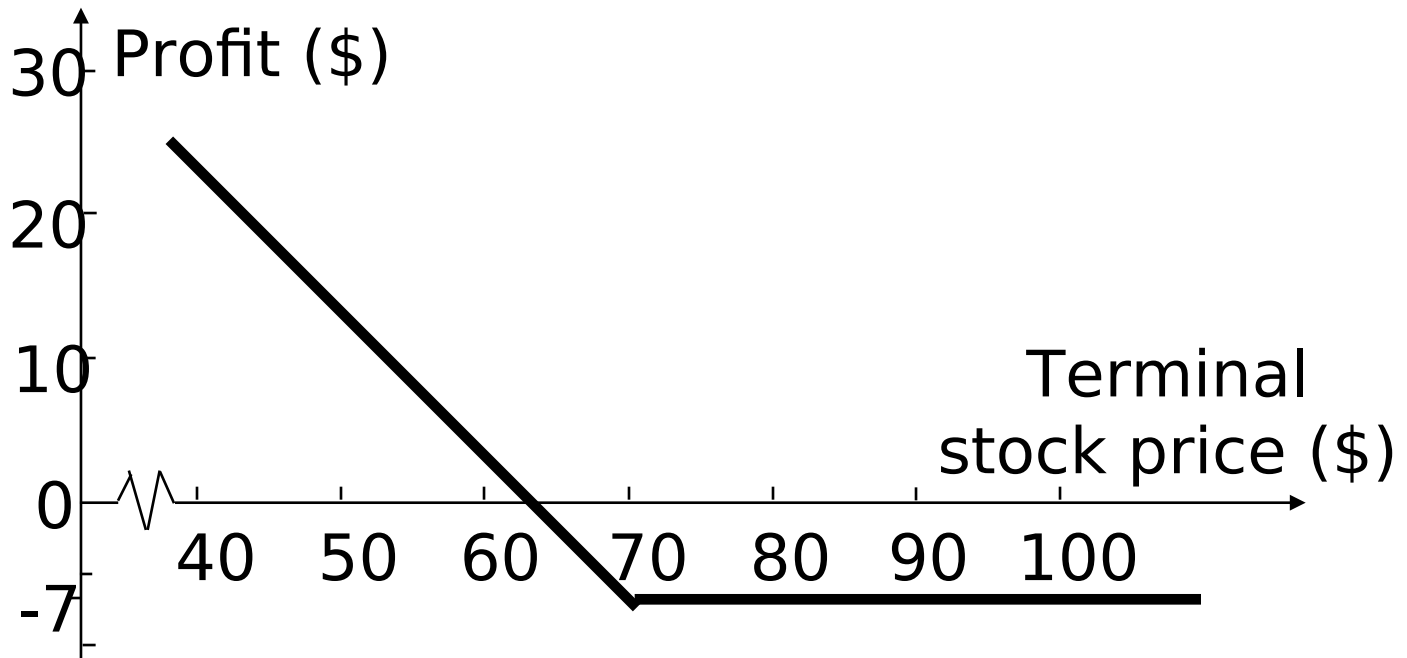
Profit from writing one European call option:
option price = \$5, strike price = \$100



Long Put

(Figure 8.2, page 181)

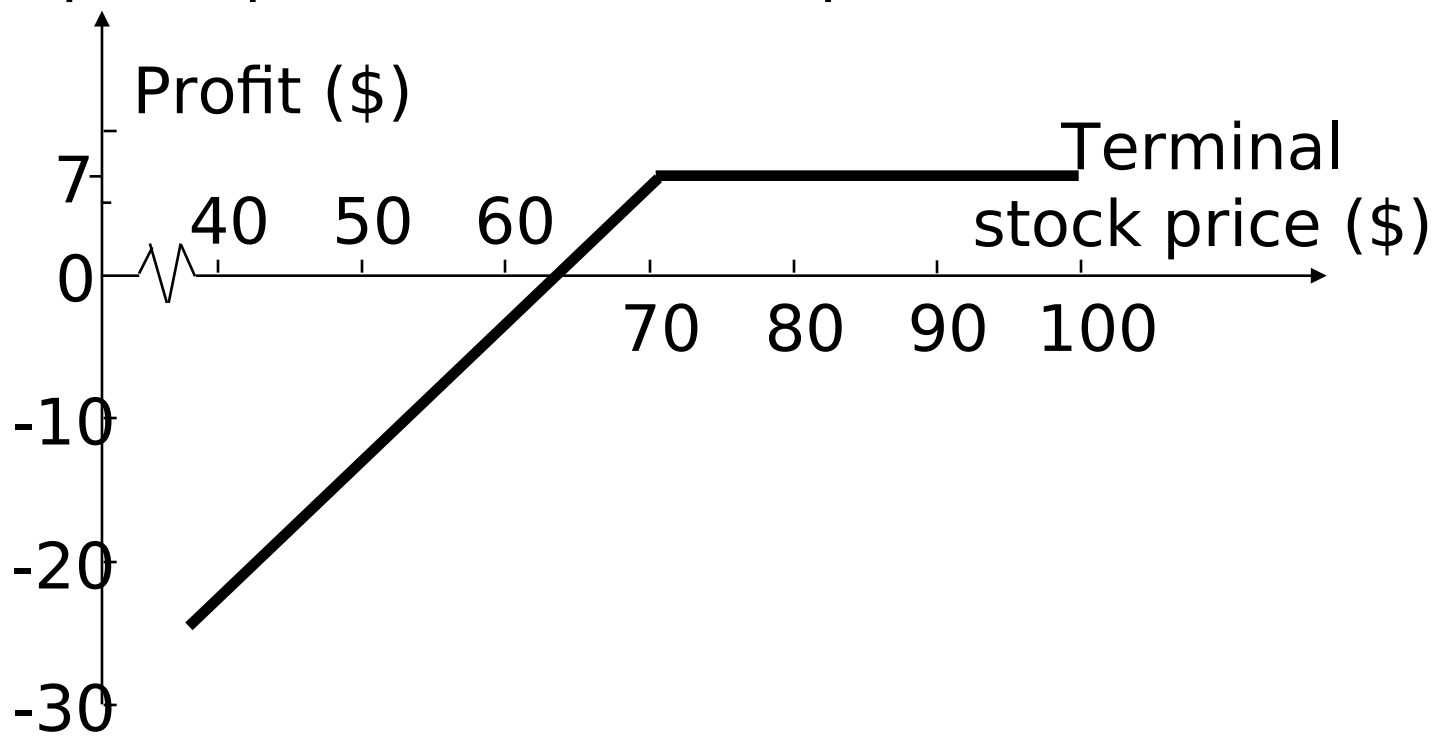
Profit from buying a European put option:
option price = \$7, strike price = \$70



Short Put

(Figure 8.4, page 182)

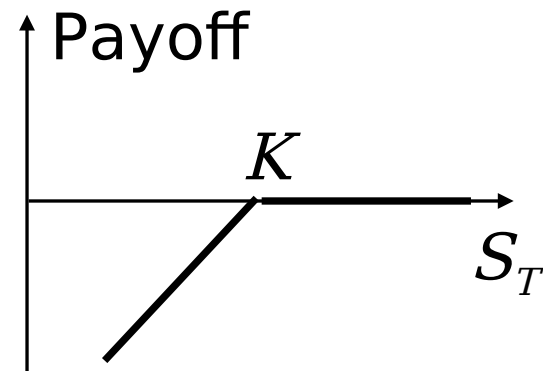
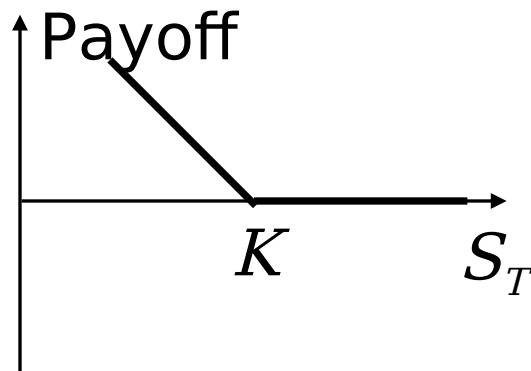
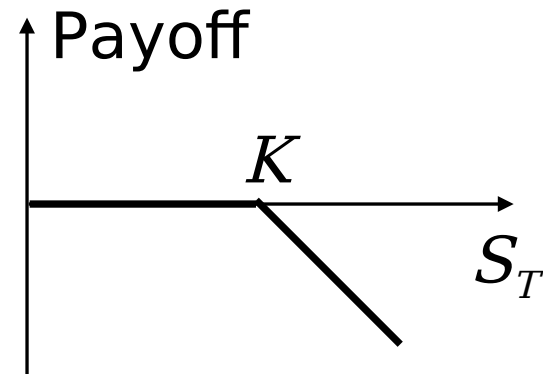
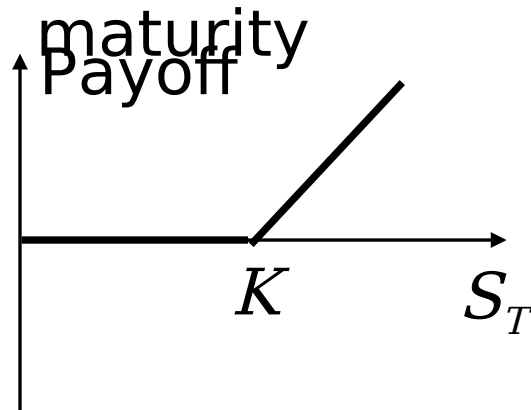
Profit from writing a European put option:
option price = \$7, strike price = \$70



Payoffs from Options

What is the Option Position in Each Case?

K = Strike price, S_T = Price of asset at maturity



Assets Underlying Exchange-Traded Options

Page 183-184

- Stocks
- Foreign Currency
- Stock Indices
- Futures

Specification of Exchange-Traded Options

- Expiration date
- Strike price
- European or American
- Call or Put (option class)

Terminology

Moneyness :

- At-the-money option
- In-the-money option
- Out-of-the-money option

Terminology

(continued)

- Option class
- Option series
- Intrinsic value
- Time value

Dividends & Stock Splits

(Page 186-188)

- Suppose you own N options with a strike price of K :
 - No adjustments are made to the option terms for cash dividends
 - When there is an n -for- m stock split,
 - the strike price is reduced to mK/n
 - the no. of options is increased to nN/m
 - Stock dividends are handled in a manner similar to stock splits

Dividends & Stock Splits

(continued)

- Consider a call option to buy 100 shares for \$20/share
- How should terms be adjusted:
 - for a 2-for-1 stock split?
 - for a 5% stock dividend?

Market Makers

- Most exchanges use market makers to facilitate options trading
- A market maker quotes both bid and ask prices when requested
- The market maker does not know whether the individual requesting the quotes wants to buy or sell

Margins (Page 190-191)

- Margins are required when options are sold
- When a naked option is written the margin is the greater of:
 - 1 A total of 100% of the proceeds of the sale plus 20% of the underlying share price less the amount (if any) by which the option is out of the money
 - 2 A total of 100% of the proceeds of the sale plus 10% of the underlying share price
- For other trading strategies there are special rules

Warrants

- Warrants are options that are issued by a corporation or a financial institution
- The number of warrants outstanding is determined by the size of the original issue and changes only when they are exercised or when they expire

Warrants

(continued)

- The issuer settles up with the holder when a warrant is exercised
- When call warrants are issued by a corporation on its own stock, exercise will usually lead to new treasury stock being issued

Executive Stock Options

- Executive stock options are a form of remuneration issued by a company to its executives
- They are usually at the money when issued
- When options are exercised the company issues more stock and sells it to the option holder for the strike price

Executive Stock Options continued

- They become vested after a period of time (usually 1 to 4 years)
- They cannot be sold
- They often last for as long as 10 or 15 years
- Accounting standards now require the expensing of executive stock options

Convertible Bonds

- Convertible bonds are regular bonds that can be exchanged for equity at certain times in the future according to a predetermined exchange ratio
- Very often a convertible is callable
- The call provision is a way in which the issuer can force conversion at a time earlier than the holder might otherwise choose